

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/056025 A1

(51) International Patent Classification?: **A61K 35/44,**
A61P 25/16

(21) International Application Number:
PCT/US2004/040178

(22) International Filing Date: 2 December 2004 (02.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/526,684 2 December 2003 (02.12.2003) US

(71) Applicant and

(72) Inventor: LIU, Ge Ming [US/US]; 55 South Kukui Street,
Apt. 2810, Honolulu, Hawaii 96813 (US).

(74) Agent: CONTRERA, Joseph G.; JACOBSON HOL-
MAN PLLC, 400 Seventh Street, N.W., Suite 600,
Washington, DC 20004 (US).

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, GR, GU, HK, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MY, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: METHODS AND COMPOSITION FOR TRANSPLANTATION OF DOPAMINERGIC NEURONS FOR PARKIN-
SON'S DISEASE

(57) Abstract: This invention discloses methods to attach and grow a monolayer of cultured human retinal pigment epithelial cells (RPE) for use in implantation into the brain as a treatment for Parkinson's disease. The invention will enable the delivery of the transplanted RPE cells in microcarriers composed of integratable or degradable substrates, including glass, plastic, polymer gels, gelatin and collagen, and glycosaminoglycans (GAGS). The invention involves the coating of the microcarrier surface with diamond-like carbon, alone or in combination with attachment factors such as laminin, fibronectin, RGDS, and extracellular matrix to increase the attachment of the RPE to the surface. Additionally the invention discloses the use of bFGF conjugated with polycarbophil, EGF conjugated with polycarbophil and heparin sulfate as also being incorporated into the micro carrier to augment attachment and proliferation of RPE during transplantation.

WO 2005/056025 A1